

# DEPARTMENT OF BOTANY

## Course Outcome

### SEM I:

**CO1. Microbiology and Phycology:** Microbiology gives knowledge related to classification and characterization of various microbes, their life cycle and their interaction with plants. It also deals with the technologies for their effective uses in industry. Algae on paper deal with the diversity and the important roles.

**CO2. Archegoniatae:** Highlights advances made in diversity analysis, developmental biology, reproductive biology and phylogenetics of the lower plants with female organ being archegoniuous present in bryophytes, pteridophytes and most of the gymnosperms.

### SEM II:

**CO3. Mycology and Phytopathology:** Studying in depth about fungi. To make students aware of the pests and pathogens adversely affecting the yield of important crop plants, their control and underlying mechanisms of employed by plants.

**CO4: Morphology & Anatomy of Angiosperms: CO4. Morphology & Anatomy:** To acquaint the students about the morphology, biology and importance of angiosperms. The course will enable students to know about the different tissue systems in angiosperms and how they function.

### SEM III:

**CO5: Plant Ecology and Phytogeography:** To acquaint the students about the population structure of the organisms, organization into communities and their functional relationships with their environment. Enable the student about diversity of plants, plant communities, and functional aspects of ecosystem. The course will enable students to understand how environment influence the life of different organisms and vice versa.

**CO6: Plant Systematics:** The course will enable students to the basis of angiosperm classification and features of few basic families of flowering plants. Also deals with recent developments in plant systematic and phylogenetics.

**CO7: Economic Botany:** To acquaint the students about the importance of plants in our day to day life.

#### **SEM IV:**

**CO8: Palaeobotany & Palynology:** To acquaint the students about the evolution of plants through study of the fossils of extinct plants and also the study of plant pollen, spores, and certain microscopic planktonic organisms, in both living and fossil form.

**CO9: Biomolecules and Cell Biology:** To acquaint the students about the structure and function of cells, along with the molecules present in cells and their interaction, which make the basic framework of cells and cellular network.

**CO10: Molecular Biology:** The course will enable students to the basic understanding of the molecular mechanisms through which genetic information is stored, expressed and transmitted among generations.

#### **SEM V:**

**CO11: Plant Physiology:** The course will enable students to know the importance of nutrients, photosynthesis, respiration, flowering and other life supportive processes in plants.

**CO12: Plant Metabolism:** The course will enable students to know about the events that help in maintenance of metabolism in plants.

#### **SEM VI:**

**CO13: Genetics & Plant Breeding:** This course is aimed at understanding the basic concepts of genetics at molecular level to develop analytical and quantitative skills from classical to molecular genetics. It also aims to teach the technique of plant breeding for crop improvement.

**CO14: Plant Biotechnology:** To acquaint the students about the application of various modern technological advances, which allowed the scientist to perform various experiments and understand the mechanism of various biological processes of plant life.

## Programme Outcomes

### **PO1. In-depth Knowledge and perception of:**

- A. The diversity of structure and function in plants.
- B. The relationships of plants with its environment and the role of plants in global ecosystem.
- C. To compare and contrast the characteristics of plants, algae, and fungi that differentiates them from each other and from other forms of life.
- D. The evolutionary trends among plants.
- E. The way of classification of plants.
- F. How Plants function at the level of the gene, genome, cell and tissue. About the complex yet perfect genetic regulation of flower development.
- G. How the theory of evolution offers the scientific explanation for the diversity of life on planet earth.
- H. The ecological interconnection of every life form and how the energy and nutrient flow through the environment. The structure of populations, communities and ecosystems.
- I. Application of statistics in biological data.

### **PO2. Practical skills:**

During the whole course students learn how to convert theoretical knowledge in to practical data and vice versa, both in the field and laboratory, with optimum precautions. They learn to interpret plant morphology and anatomy. Identification of plant diseases. How to identify a Plant. The techniques used to analysis vegetation. A range of biochemical and physiochemical analyses of plant materials. How to analyze data using statistical methods.

### **PO3. Usage of modern tool:**

They learn to use various chemicals, techniques, and instruments for Biochemical estimation, Molecular Biology, Biotechnology and Plant Tissue culture experiments.

### **PO4. Plants, environment and sustainability:**

Understand the importance of the plants for environment and its need for sustainable development of the society.

### **PO5. Importance of team work:**

How to work efficiently as an individual or as a part of diverse teams.

### **PO6. Transferable skills:**

Use of IT (word-processing, internet). Documentation of scientific ideas/data. Ability to work in a group. Ability to gather information through survey of literature. Acquiring ability to apply the knowledge of sciences to study, analyze and interpret any plant form.